

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-10 (canceled)

Claim 11 (original): A method for manufacturing a surface-emitting laser diode, the method comprising the steps of:

- (a) sequentially forming a p-type material layer for lasing, an active layer, and an n-type material layer for lasing on a substrate;
- (b) forming a first distributed Bragg reflector (DBR) on the n-type material layer, around which an n-type electrode is formed;
- (c) forming a laser output window on a bottom surface of the substrate, the laser output window having a shape suitable for compensating for a drop in characteristics of a laser beam caused by the presence of the substrate;
- (d) forming a p-type electrode on the bottom surface of the substrate to surround the laser output window; and
- (e) forming a second DBR layer on the laser output window.

Claim 12 (original): The method of claim 11, wherein step (b) comprises:
forming a conductive layer on the n-type material layer;
forming a mask pattern on the conductive layer to expose a portion of the conductive layer in which the first DBR layer is to be formed;
removing the portion of the conductive layer which is exposed through the mask pattern, using the mask pattern as an etch mask;
forming the first DBR layer on a portion of the n-type material layer from which the conductive layer is removed; and

removing the mask pattern.

Claim 13 (original): The method of claim 11, wherein step (b) comprises:
forming the first DBR layer on the n-type material layer;
forming a mask pattern on the first DBR layer to expose a portion of the first DBR
layer, in which the n-type electrode is to be formed;
removing the portion of the first DBR layer which is exposed through the mask
pattern, using the mask pattern as an etch mask;
forming a conductive layer on a portion of the n-type material layer, from which the
first DBR layer is removed; and
removing the mask pattern.

Claim 14 (original): The method of claim 11, wherein step (c) comprises:
polishing the bottom surface of the substrate;
forming a mask pattern to cover a portion of the polished bottom surface of the
substrate in which the laser output window is to be formed;
processing the mask pattern into a shape suitable for compensating for diffraction of
the laser beam caused by the presence of the substrate; and
etching the bottom surface of the substrate on which the processed mask pattern is
formed, by a predetermined thickness, to transfer the shape of the processed mask pattern to
the bottom surface of the substrate.

Claim 15 (original): The method of claim 11, wherein, in step (c), the laser output
window is formed in a convex lens-like shape having a predetermined curvature suitable for
compensating for diffraction of the laser beam.

Claim 16 (original): The method of claim 14, wherein, in processing the mask
pattern, the mask pattern is processed into a convex lens-like shape by reflowing, the convex

lens-like shape having a predetermined curvature suitable for compensating for diffraction of the laser beam.

Claim 17 (original): The method of claim 14, wherein the substrate is formed of multiple layers including a first substrate and a second substrate on the first substrate.

Claim 18 (original): The method of claim 17, wherein etching the bottom surface of the substrate on which the processed mask pattern is formed is continued until the second substrate is exposed.

Claim 19 (currently amended): The method of claim 11 or 14, wherein the substrate is a p-type doped substrate or an undoped substrate.

Claim 20 (original): The method of claim 17, wherein one of the first and second substrates is a p-type doped substrate or an undoped substrate.

Claim 21 (original): The method of claim 17, wherein the first substrate is formed as a substrate on which a gallium nitride based material is grown and the second substrate is formed as a p-type spacer.

Claim 22 (original): A method for manufacturing a surface-emitting laser diode, the method comprising the steps of:

- (a) sequentially forming on a substrate an n-type material layer for lasing, an active layer, a p-type material layer for lasing, and a p-type spacer;
- (b) forming a laser output window in a predetermined area of the p-type spacer;
- (c) forming a p-type electrode on the p-type spacer to surround the laser output window;
- (d) forming a first distributed Bragg reflector (DBR) layer on the laser output window;
- (e) removing the substrate; and

(f) forming a second DBR layer on a predetermined portion of a bottom surface of the n-type material layer and forming an n-type electrode around the second DBR layer.

Claim 23 (original): The method of claim 22, wherein the substrate is formed of an n-type substrate or a sapphire substrate and a gallium nitride based material is grown thereon.

Claim 24 (original): The method of claim 22, wherein step (b) comprises:
forming a mask pattern to cover a portion of the p-type spacer in which the laser output window is to be formed;
processing the mask pattern into a shape suitable for compensating for diffraction of a laser beam caused by the presence of the p-type substrate; and
etching the entire surface of the p-type spacer on which the processed mask pattern is formed, by a predetermined thickness, to transfer the shape of the processed mask pattern to the p-type spacer.

Claim 25 (original): The method of claim 24, wherein the laser output window is formed in a convex lens-like shape having a predetermined curvature suitable for compensating for diffraction of the laser beam.

Claim 26 (original): The method of claim 24, wherein, in processing the mask pattern, the mask pattern is processed into a lens-like shape by reflowing, the lens-like shape having a predetermined curvature suitable for compensating for the diffraction of the laser beam.

Claim 27 (new): The method of claim 14, wherein the substrate is a p-type doped substrate or an undoped substrate.